

REMARKS

Claims 1-28 are pending with claims 1, 10, and 18 being independent. Claims 26-28 are newly presented. Support for these new claims can be found in the specification at least at page 8, line 24 to page 9, line 17. No new matter has been added.

Claims 1 and 6-9

Independent claim 1 recites a system for an AC electrical circuit. The system includes an actuator, a source that operates to supply current to the actuator, and an actuator control system. The actuator converts current into a force to move contacts relative to one another to switch power on and off in the AC electrical circuit. The actuator control system is connected to the actuator and to the source to control the current to the actuator. The actuator control system includes a controller coupled to the actuator to control current through the actuator based on information about the actuator. The information about the actuator includes one or more of position information and velocity information. The current through the actuator is independent of a voltage at which the source operates.

Claims 1 and 6-9 have been rejected as being anticipated by U.S. Patent No. 6,501,196 (Lo). Applicant requests withdrawal of this rejection because Lo fails to describe or suggest a system having a controller that is coupled to an actuator to control current through the actuator based on information about the actuator, as recited in claim 1.

Lo describes a power distribution system that "allows AC electrical power to be provided from one or more independent AC power sources to an AC load." See Lo at col. 2, lines 13-16. The system described in Lo includes a power supply (not shown in Fig. 7a but feeding into connector 716A), a main switch 702A connected to the power supply, and a load 92 that receives power from the power supply. See Lo at col. 8, lines 16-34 and Fig. 7a. Lo's system includes a safety system that shuts off power from the power supply if one of the relays (labeled 702A1, 702A2, 702A3, and 702A4) within the main switch 702A shorts. See Lo at col. 9, lines 35-44 and Fig. 7a. This safety system includes a sensor 718A coupled to the main switch 702A, a trip

relay 746A that receives a signal from the sensor 718A, and a circuit breaker 720A upstream from the power supply. See Lo at col. 9, lines 45-57 and Fig. 7A.

The Examiner points to the trip relay 746A as somehow being an actuator. While the relay 746A closes a circuit that causes the circuit breaker 720A to trip, the switching system does not include a controller coupled to the relay 746A to control current through the relay 746A based on information about the relay 746A. Rather, the current through the relay 746A is solely based on the voltage V_A output from the DC power supply 726A and the ground signal from the sensor 718A, neither of which provides information about the relay 746A. For this reason, Lo fails to describe or suggest a controller that is coupled to an actuator to control current through the actuator based on information about the actuator. Accordingly, claim 1 is allowable over Lo as are claims 6-9, which depend from claim 1.

Claims 2-5

Claims 2-5 have been rejected as being obvious over Lo in view of U.S. Patent No. 6,118,613 (Kojima). Claims 2-5 depend from claim 1, which was rejected as being anticipated by Lo. Claim 1 is allowable over any possible combination of Lo and Kojima because Kojima also fails to describe or suggest controlling current through an actuator based on information about the actuator, where the information about the actuator includes one or more of position information and velocity information.

Kojima relates to a circuit 100 for driving an electromagnetic actuator 1. See Kojima at col. 9, lines 5-11 and Fig. 3. The drive circuit 100 includes a feedback circuit 34 that provides feedback to the actuator 1 in the form of a voltage or a current. See Kojima at col. 9, lines 26-36. However, Kojima's feedback circuit 34 does not provide feedback to the actuator 1 in the form of position information or velocity information about the actuator 1. For this reason, Kojima fails to describe or suggest controlling current through the actuator based on information about the actuator where the information includes one or more of position information and velocity information, as recited in claim 1. Accordingly, claim 1 is allowable over any possible

combination of Lo and Kojima and claims 2-5 are allowable for at least the reasons that claim 1 is allowable.

Claims 10-25

Independent claim 10 recites a method for controlling an actuator connected to an AC electrical circuit to interrupt current. The actuator is configured to convert current into a force to move contacts relative to one another to switch power on and off in the AC electrical circuit. The method includes supplying power to an actuator, and sensing one or more of position information and velocity information relating to the actuator. The method includes controlling current through the actuator based on the sensed information about the actuator such that the current through the actuator is independent of a voltage at which the power is supplied.

Independent claim 18 recites an actuator control system for an AC electrical circuit. The actuator control system includes an actuator interface, an input interface, and a controller connected to the actuator interface and to the input interface. The actuator interface connects to an actuator that converts current into a force to move contacts relative to one another to switch power on and off in the AC electrical circuit. The input interface connects to a source that operates to supply current to the actuator. The controller controls the current through the actuator based on information about the actuator, in which actuator information includes one or more of velocity information and position information, such that the current through the actuator is independent of a voltage at which the source operates.

Claims 10-25 have been rejected as being obvious over Lo in view of Kojima. Applicant requests withdrawal of this rejection because, as discussed above, Lo fails to describe or suggest controlling current through an actuator based on information about the actuator, where the information about the actuator includes one or more of position information and velocity information, as recited in claims 10 and 18, and because Kojima fails to cure the deficiencies of Lo. For this reason, claims 10 and 18 are allowable over Lo in view of Kojima. Claims 11-17 and 19-25 depend, respectively, from claims 10 and 18 and are allowable for at least the reasons that claims 10 and 18 are allowable.

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Claims 26-28

Claims 26-28 depend from claims 1, 10, and 18 and are allowable for at least the reasons that claims 1, 10, and 18 are allowable.

Enclosed are a \$54.00 for additional claims fee and a \$110.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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Diana DiBerardino
Diana DiBerardino
Reg. No. 45,653

Fish & Richardson P.C.
1425 K Street, N.W.
11th Floor
Washington, DC 20005-3500
Telephone: (202) 783-5070
Facsimile: (202) 783-2331